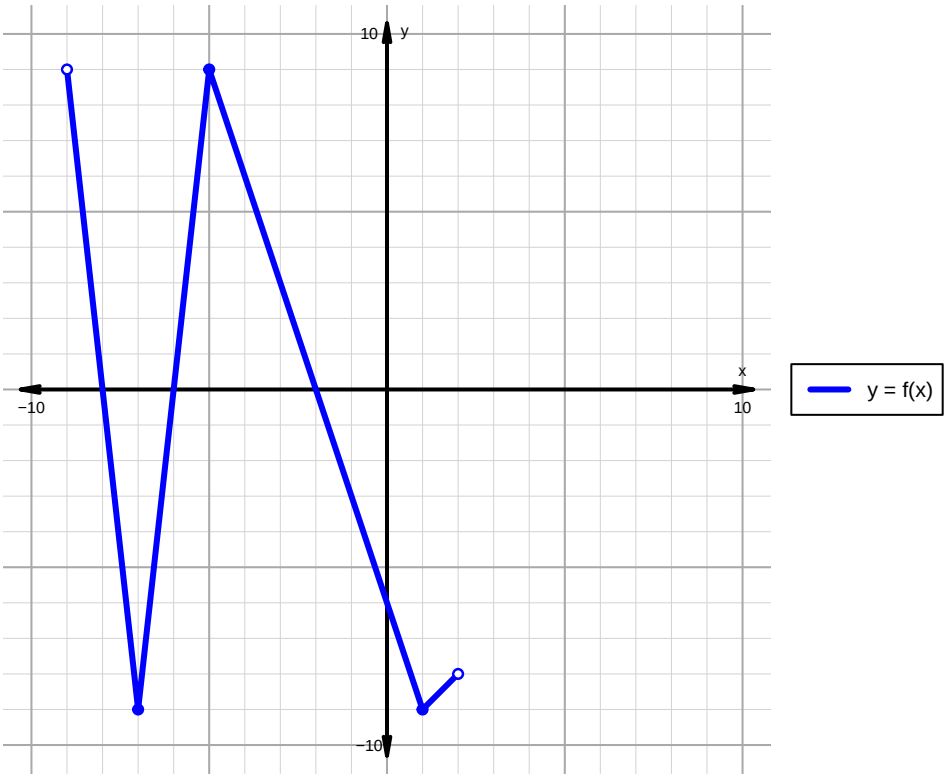
Name: Date:

Intervals, Transformations, and Slope Solution (version 31)

1. The function f is graphed below.

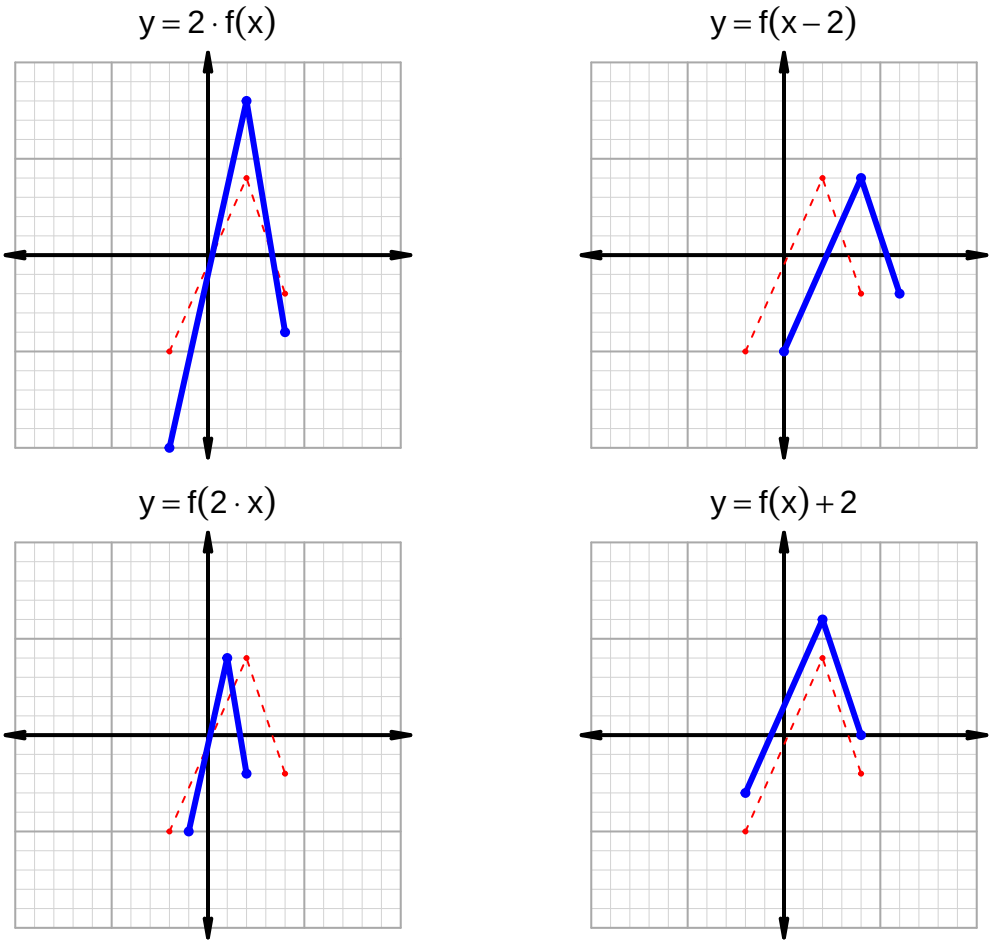


Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-6, -2)$
Negative	$(-9, -8) \cup (-8, -6) \cup (-2, 2)$
Increasing	$(-7, -5) \cup (1, 2)$
Decreasing	$(-9, -7) \cup (-5, 1)$
Domain	$(-9, 2)$
Range	$(-9, 9)$

Intervals, Transformations, and Slope Solution (version 31)

2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. Please add the indicated transformed graphs indicated by the equations below using a solid line.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 14$ and $x_2 = 39$. Express your answer as a reduced fraction.

x	$g(x)$
14	55
20	14
39	20
55	39

$\frac{f(39)-f(14)}{39-14} = \frac{20-55}{39-14} = \frac{-35}{25}$

The greatest common factor of -35 and 25 is 5. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-7}{5}$$